

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
690 Walnut Ave.St. 150  
Vallejo, CA 94592-1133  
(707) 649-5453  
(707) 649-5493

Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-002470**Date Inspected:** 20-Mar-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Zhao Chen Sun and See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** See Below**Summary of Items Observed:**

The Caltrans Quality Assurance (QA) Inspector, M. Paul Stovall, was present at Zhenhua Port Machinery Company (ZPMC) on Changxing Island, Shanghai, China for the purpose of monitoring Quality Control (QC) functions during the fabrication of the Self Anchored Suspension (SAS) section of the San Francisco/Oakland Bay Bridge.

**New Tower Shop**

The QA Inspector observed ZPMC personnel machining bevel angles on Skin plates using the horizontal mill and Heat Straightening various plate material.

**Bay 2**

The QA Inspector observed ZPMC personnel drilling bolt holes in the diagonal tube steel (TS) braces that will be used on the Orthotropic Box Girder (OBG), on the Floor Beams (FB). The QA Inspector observed ZPMC personnel cutting various plate material for the Tower.

**Bay 3**

The QA Inspector observed ZPMC welding personnel Liang Yan Hai, ID #066457 fitting and tack welding WT stiffeners onto Bottom Plates (BP) and Side Plates (SP) BP031-001 and BP004-001.

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## WELDING INSPECTION REPORT

( Continued Page 2 of 2 )

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ZPMC personnel are laying out plate material for WT stiffeners to be welded.

ZPMC personnel were observed by the QA Inspector using an oxy-acetylene torch to cut bevel groove angles into W21x 57's that will be spliced using Complete Joint Penetration (CJP) welds and welded and un-welded W21 x 57's that are being cut for use as WT stiffeners.

The QA Inspector observed ZPMC welding personnel Li Zhaoqian, ID #048810 welding Complete Joint Penetration (CJP) splices on W21 x 57's using Welding Procedure Specifications (WPS) WPS-B-T-2231-B-U2-F and WPS-B-T-2233-B-U2-F.

ZPMC personnel are drilling bolt holes into the flange of various cut, unwelded WT stiffeners.

The QA Inspector observed ZPMC QC perform Magnetic Particle Tests (MT) on SP046-01. This work is in conformance with CWR-044. The MT revealed one (1) crack each at the end of the weld terminations of weld numbers -009 to 010 and -005 to -006.

Bay 4

The QA Inspector observed ZPMC personnel welding on Tower Internal Diaphragm plate weld joint ESD1-SA287-3A and 4A. ZPMC Certified Welding Inspector (CWI) Zhao Chen Sun was monitoring the temperature of the weld and heat affected zone, not allowing it to get too hot or too cold. This has allowed welding to progress throughout the day instead of welding for a partial day, or a couple of hours. The Submerged Arc Welding (SAW) WPS was WPS-B-T-3221-B-U3c-5-1. The QA Inspector checked the WPS parameters at different times and recorded 624 amps, 30.8 volts; and 638 amps, 30.8 volts.

The QA Inspector observed ZPMC personnel Heat Straightening various Internal Tower Diaphragm Plates.

### Summary of Conversations:

The QA Inspector had ongoing conversations with ABF QC Inspector C. K. Chan and other ABF QC personnel in regards to preheat and interpass temperature during welding.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Stovall,Paul	Quality Assurance Inspector
<b>Reviewed By:</b>	Hager,Craig	QA Reviewer

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